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Case Report

Methimazole associated DRESS syndrome: a rare case

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ABSTRACT

Drug rush with eosinophilia and systemic symptoms (DRESS) syndrome is a rare, life-threatening idiosyncratic drug reaction characterized by acute onset of fever, skin rash, lymphhadenopathy and multisystemic organ involvement. Rapid diagnosis and treatment of patients with DRESS syndrome is crucial because of high mortality risk. Supportive therapy includes antipyretics, H1 antihistamines, humidifiers and the use of topical steroids to heal symptoms. Systemic corticosteroids can minimize symptoms of delayed hypersensitivity reactions. In this article, a case with DRESS syndrome due to use of methimazole is showed and it has been requested to take attention to DRESS syndrome.

Keywords: DRESS, drug rash, methimazole

INTRODUCTION

Drug reaction with eosinophilia and systemic symptoms (DRESS) syndrome is a rare, life-threatening drug reaction characterized by acute onset of fever, skin rash, and multisystemic involvement. Many drugs from different groups have been reported to cause this syndrome. The most frequently reported drugs in both pediatric and adult populations include phenytoin, carbamazepine, dapsone, sulfasalazine, allopurinol, vancomycin, sulfonamides.[1] In a multicenter study in our country, amoxicillin-clavulanate and carbamazepine were found to be the main responsible drugs in the investigation of multiple cases in the childhood age group.[2]

CASE

A 68-year-old woman was admitted to our emergency medicine clinic with an erythematous rash covering the whole body for 5 days. She stated that she had been taking methimazole for about 10 days due to hyperthyroidism and had a fever of 37.8°C at presentation (Figure 1,2). Laboratory tests revealed pathologic values as urea: 105 mg/dl, serum creatinine 1.32 mg/dl, gama-glutamyl transferase (GGT): 94 U/L, laktat dehydrogenase (LDH): 423 U/L, C-reactive protein (CRP): 37.69 mg/dl, platelet: 421,000/µL. The patient had maculopapular rash all over the body (Figure 1), edema and erythema on the tongue. The patient was hospitalized with a prediagnosis of 'DRESS' syndrome, thyromazole treatment was discontinued and the patient was admitted to dermatology after other related consultations were completed. The patient was diagnosed with 'DRESS' syndrome based on anamnesis, clinical and histopathologic findings. Prednol treatment (60 mg/day) resulted in almost complete improvement in the lesions and laboratory findings and the steroid dose was reduced and discontinued in 2 months. The patient was observed to have no complaints at follow-up visits.

Figure 1,2. Patient's rash on admission

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DISCUSSION

Similar to adults, in a review of 82 publications including 148 cases of DRESS syndrome in childhood, anticonvulsants were found to be responsible in 52.6% of cases.[3] In a study conducted in North America, antibiotics (mostly vancomycin and beta-lactam antibiotics) were found to be responsible in 74% of cases and anticonvulsants in 20%.[4]

DRESS is a highly variable entity with a wide spectrum of clinical manifestations. Clinical manifestations can occur over a wide period of time, ranging from 2-8 weeks after the onset of suspected drug ingestion. Changes in laboratory values may be observed in the asymptomatic early period. Although certain organ involvement is seen with certain drugs, the clinical picture is more closely related to the host immune system rather than the responsible drug.[5]

The clinical picture usually begins with a rapidly progressive fever accompanied by a maculopapular morbiliform rash. Lymphadenopathy and pharyngitis are added in the following 1-2 days, followed by multiple organ involvement.[5] The long and variable severe clinical picture also leads to reactivations of various viruses from the herpes virus family. Skin lesions, the most common and widespread finding, typically begin as a mildly pruritic morbilliform eruption with symmetrical distribution on the face, neck, upper extremities and trunk and coalesce into a generalized erythema. The rash may become edematous, sometimes developing purpuric lesions, pustules and even vesicles. If the responsible drug is not discontinued, the lesions progress to erythroderma and/or exfoliative dermatitis. Facial edema is a very characteristic finding for DRESS.

Steven-Johnson syndrome, toxic epidermal necrolysis, acute generalized exanthematous pustulosis, angioimmunoblastic T-cell lymphoma, hypereosinophilic syndromes, Sezary syndrome, acute cutaneous lupus erythematosus can be considered in the differential diagnosis.[6]

Unfortunately, there is no pathognomonic finding and/or diagnostic test for the diagnosis of DRESS. The diagnosis is made clinically by considering laboratory findings in the presence of a compatible clinical picture that may be related to drug intake. Since the mortality rate reaches up to 10%, detailed history, clinical observation and laboratory investigations should be performed rapidly in suspected cases within a plan. There are diagnostic scoring systems developed to confirm or exclude the diagnosis of DRESS. The most widely used diagnostic scoring system is RegiSCAR (The registry of severe cutaneous adverse reaction).[1]

DRESS syndrome is a potentially life-threatening drug hypersensitivity reaction with an estimated mortality rate of 10% in adults and 1% in children, mainly due to hepatic necrosis.[3] High absolute eosinophil count (6000/L), thrombocytopenia, pancytopenia, history of chronic renal failure, multi-organ involvement and multiple underlying diseases are poor prognostic indicators associated with high mortality. Nevertheless, most patients with DRESS syndrome experience complete recovery after discontinuation of the responsible drug.[7]

In the process of identifying the responsible drug in DRESS, clinical judgment should be relied upon to identify the most likely responsible drug. Complete blood count, markers of inflammation, liver function tests, renal function tests, blood electrolytes, lipase, amylase, creatinine kinase, troponin I, immunoglobulins should be rapidly evaluated.

In the early period in these patients; the responsible drug and cross-reacting drugs should be discontinued immediately. Empirical use of NSAIDs and antibiotics should be avoided. Patients should be evaluated together with a multidisciplinary group of specialists. All cases should be hospitalized, except for very mild cases of DRESS that can be followed closely with repeated clinical and laboratory monitoring.

Antipyretics, H1 antihistamines, humidifiers and other treatments should be given as supportive therapy. Systemic corticosteroid therapy is strongly recommended in severe cases. When control cannot be achieved with corticosteroids or if corticosteroids are contraindicated: Cyclosporine 4-5mg/kg/day for 5-7 days is recommended.

CONCLUSION

In conclusion, the diagnosis of DRESS syndrome is difficult because it occurs in a wide clinical spectrum and its latent period is prolonged. DRESS syndrome should be kept in mind in the differential diagnosis especially in patients who use every drug treatment and present with fever and skin rash. The awareness of DRESS syndrome among emergency medicine doctors should be increased and morbidity and mortality rates will decrease with early and rapid diagnosis-treatment.

ETHICAL DECLARATIONS

Informed Consent
The patient signed and free and informed consent form.

Referee Evaluation Process
Externally peer-reviewed.

Conflict of Interest Statement
The authors have no conflicts of interest to declare.

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Author Contributions
All of the authors declare that they have all participated in the design, execution, and analysis of the paper, and that they have approved the final version.

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